

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 April 2004 (22.04.2004)

PCT

(10) International Publication Number
WO 2004/034661 A1

(51) International Patent Classification⁷: **H04L 25/02**,
25/06

(21) International Application Number:
PCT/EP2003/010245

(22) International Filing Date:
15 September 2003 (15.09.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
02256376.1 16 September 2002 (16.09.2002) EP
60/413,798 25 September 2002 (25.09.2002) US

(71) Applicant (for all designated States except US): TELE-
FONAKTIEBOLAGET LM ERICSSON (publ)
[SE/SE]; S-164 83 Stockholm (SE).

(72) Inventor; and

(75) Inventor/Applicant (for US only): SHOUSHENG, He
[SE/SE]; Svämarevägen 3, S-247 35 Södra Sanby (SE).

(74) Agent: HASELTINE LAKE; Imperial House, 15-19
Kingsway, London WC2B 6UD (GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ (utility model), CZ, DE (utility model), DE, DK (utility
model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI
(utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID,
IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO,
NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK,
SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,
VN, YU, ZA, ZM, ZW.

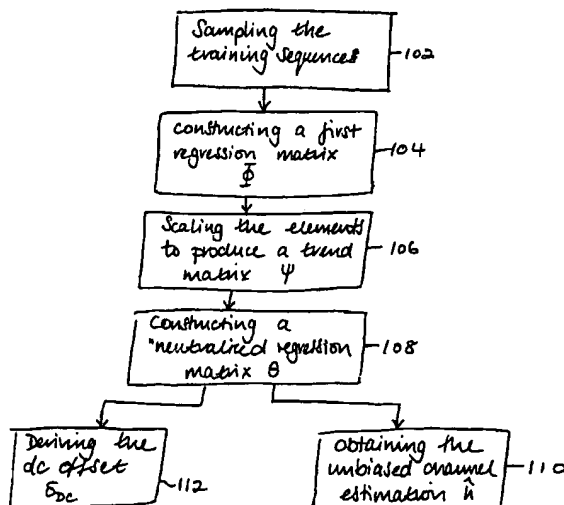
(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND APPARATUS FOR DC OFFSET COMPENSATION IN A DIGITAL COMMUNICATION SYSTEM



(57) Abstract: A method of compensating for dc offset of a received signal transmitted over a channel having a plurality of paths, the received signal comprising a modulated data signal and a modulated known training sequence signal, the method comprising the steps of: constructing (104) from the known training sequence signal a first regression matrix; path-combining (106) the incrementally rotated elements of the first regression matrix to produce the elements of a trend matrix; deriving (108) a neutralized second regression matrix from the first regression matrix and the trend matrix; utilising the neutralized second regression matrix to compensate (110, 112) for dc offset of the received modulated data signal.